North Beach, Hampton

BEACH WATER QUALITY REPORT
SUMMER 2004

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Healthy Swimming Through Clean Water

NHDES Beach Program (603) 271-4893

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

BACKGROUND

The New Hampshire Department of Environmental Services (NHDES) has operated its Public Beach Inspection Program, or Beach Program, for over twenty years. Coastal beach monitoring began in 1989 and has continued through the present. NHDES recognizes the threat to public health at public beaches and continues to monitor public beaches throughout the state for the presence of pathogenic organisms. Coastal beaches are monitored for the presence of the fecal bacteria Enterococci. These fecal bacteria are present in the intestines of warm-blooded animals including humans. Fecal bacteria, when present in high concentrations and ingested, can commonly cause gastrointestinal illnesses such as nausea, vomiting and diarrhea. They are also known as indicator organisms, meaning their presence in water may indicate the presence of other potentially pathogenic organisms.

In October of 2000, the United States Environmental Protection Agency (EPA) signed into law the Beaches Environmental Assessment and Coastal Health (BEACH) Act. The BEACH Act is an amendment to the Clean Water Act that authorizes the EPA to award grants to eligible states. The purpose of the BEACH Act is to reduce the risk of disease to users of the nation's recreational waters. BEACH Act grants provide support for development and implementation of monitoring and notification programs that help protect the public from exposure to pathogenic microorganisms in coastal recreation waters.

NHDES received grant funding in 2002 to develop and implement a beach monitoring and notification program consistent with EPA's performance criteria requirements published in the *National Beach Guidance and Required Performance Criteria for Grants* document (www.epa.gov/waterscience/beaches/grants). NHDES has successfully met all requirements and continues to expand the monitoring and notification program. In 2002, only 9 coastal beaches were monitored, in 2003 fifteen coastal beaches and in 2004 sixteen coastal beach were monitored on a routine basis.

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Beach Description

North Beach is owned and maintained by the New Hampshire Division of Parks and Recreation, State Parks Bureau.

North Beach is a soft sand beach with some rocky areas at the southern end. Its total length is 7,525 feet, or slightly less than one and a half miles. The beach is frequently used by residents and vacationers for swimming and surfing. There are 13 access points to the beach from Route 1A. Metered parking is available along Route 1A. Lifeguards are present and sanitary facilities are available at the northern end of the beach.

Waterfowl, mainly seagulls, and dogs were observed on the beach in 2004, although in small numbers. There are restrictions for dogs on the beach. Pets are not allowed on any state beaches per the State Parks Bureau.

Below is a brief description of the three sampling stations for North Beach, Hampton. These stations are pictured in Figure 1.

- The right sample station is located off of Route 1A in Hampton, north of Hampton Beach State Park. Park at the end of the second set of left-side parking (Row 11) and cross the road to the stairs going up to the sidewalk.
- The center sample station is located off of Route 1A. Park between 9th and 10th streets where there are stairs to the beach.
- The left sample station is located by the public bathrooms at the northern end of the beach. Park in the lot and take the stairs down to the beach.

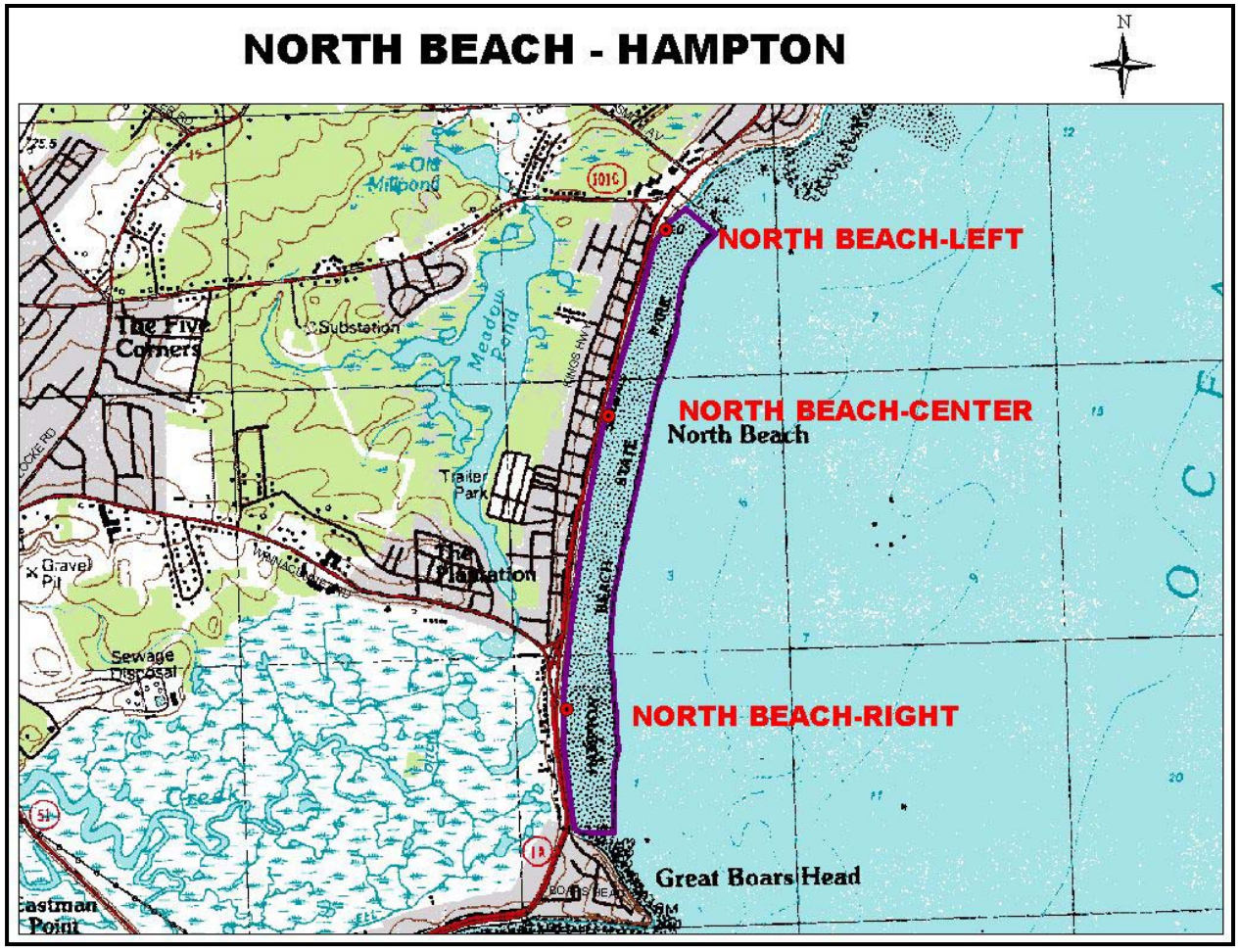

Figure 1. Map of North Beach

Tier Status and Sampling Frequency

The Beach Program developed a risk-based beach evaluation process and tiered monitoring approach and implemented this approach during the 2003 beach season. Beach evaluations are conducted annually to determine potential health threats to the public. Evaluations are based on several criteria in three main categories: beach history, microbial pathogen sources, and beach use. Based on these criteria, beaches are assigned either a Tier I or Tier II status. Tier I are high priority beaches that have an increased potential to affect public health while Tier II are low priority beaches that have less potential to affect public health. Beach sample frequency is based on the Tier statuses; Tier I beaches are sampled weekly and Tier II beaches are sampled every other week.

North Beach was categorized as a Tier I beach based on the Beach Program's Risk-Based Evaluation ranking system. This ranking indicates that the beach is frequently used by the public but there are potential pollution sources present that may negatively affect public health. The North Beach Tier I ranking has remained in place since the ranking system was implemented.

Water Quality

Beaches are monitored to ensure compliance with State Water Quality Standards. Marine waters are analyzed for the presence of the fecal bacteria Enterococci. Enterococci are known as indicator organisms, meaning their presence may indicate the presence of pathogenic bacteria. The state standard for Enterococci at public beaches is 104 counts/100 mL in one sample, or a geometric mean of 35 counts/100 mL in three samples collected over sixty days. Standard exceedances require the issuance and posting of a beach advisory. Beach advisories remain in effect until subsequent beach sampling indicates safe water quality conditions.

The number of samples collected at each beach is determined by the beach length. Beaches less than 100 feet in length are sampled at left and right locations 1/3 of the distance from either end of the beach. Beaches greater than 100 feet in length are bracketed into thirds and sampled at left, center and right locations. Routine sample collection may be enhanced by sampling known or suspected pollution sources to the beach area. Also, storm event sampling may be conducted at beaches where wet-weather events are expected to affect beach water quality.

The 2004 sampling season began June 1st. June was cooler and drier than normal, July was cooler and wetter than normal, while August was warmer and wetter than normal. The sampling season encompassed 108 days, of which precipitation was recorded on 42 days (based on Seabrook WWTF recorded precipitation). Twenty beach days (normal beach hours are considered 9:00 a.m. to 5:00 p.m.) were directly affected by precipitation.

North Beach was sampled during the pre-season and once per week from June 1st through Labor Day. Three samples were collected at left, center and right stations (Figure 1). There were a total of 14 routine inspections performed and 42 samples collected in 2004. One pre-season inspection was performed at the beach.

Table 1 includes the Enterococci data from each sampling event in 2004. Overall, the Enterococci levels were very low. On two occasions, Enterococci levels were slightly elevated at the right sample station (Figure 2). There is no indication as to the source of the elevated levels.

Table 1. North Beach Enterococci Data 2004

Sample Date	Station Name	Results (counts per 100 mL)
05/17/2004	North Beach – Left	<10
	North Beach – Center	<10
	North Beach – Right	<10
06/01/2004	North Beach – Left	50
	North Beach – Center	10
	North Beach – Right	<10
06/07/2004	North Beach – Left	<10
	North Beach – Center	<10
	North Beach – Right	<10
06/15/2004	North Beach – Left	<10
	North Beach – Center	<10
	North Beach – Right	<10
06/21/2004	North Beach – Left	<10
	North Beach – Center	<10
	North Beach – Right	<10
06/28/2004	North Beach – Left	<10
	North Beach – Center	<10
	North Beach – Right	<10
07/07/2004	North Beach – Left	10
	North Beach – Center	<10
	North Beach – Right	<10
07/13/2004	North Beach – Left	<10
	North Beach – Center	<10
	North Beach – Right	<10
07/19/2004	North Beach – Left	<10
	North Beach – Center	<10
	North Beach – Right	<10
07/26/2004	North Beach – Left	<10
	North Beach – Center	<10
	North Beach – Right	<10
08/03/2004	North Beach – Left	10
	North Beach – Center	<10
	North Beach – Right	<10
08/09/2004	North Beach – Left	<10
	North Beach – Center	<10
	North Beach – Right	<10
08/17/2004	North Beach – Left	<10
	North Beach – Center	<10
	North Beach – Right	<10
08/25/2004	North Beach – Left	<10
	North Beach – Center	<10
	North Beach – Right	5
08/30/2004	North Beach – Left	50
	North Beach – Center	<10
	North Beach – Right	<10

Figure 2 depicts the Enterococci data relative to the state standard for coastal beaches.

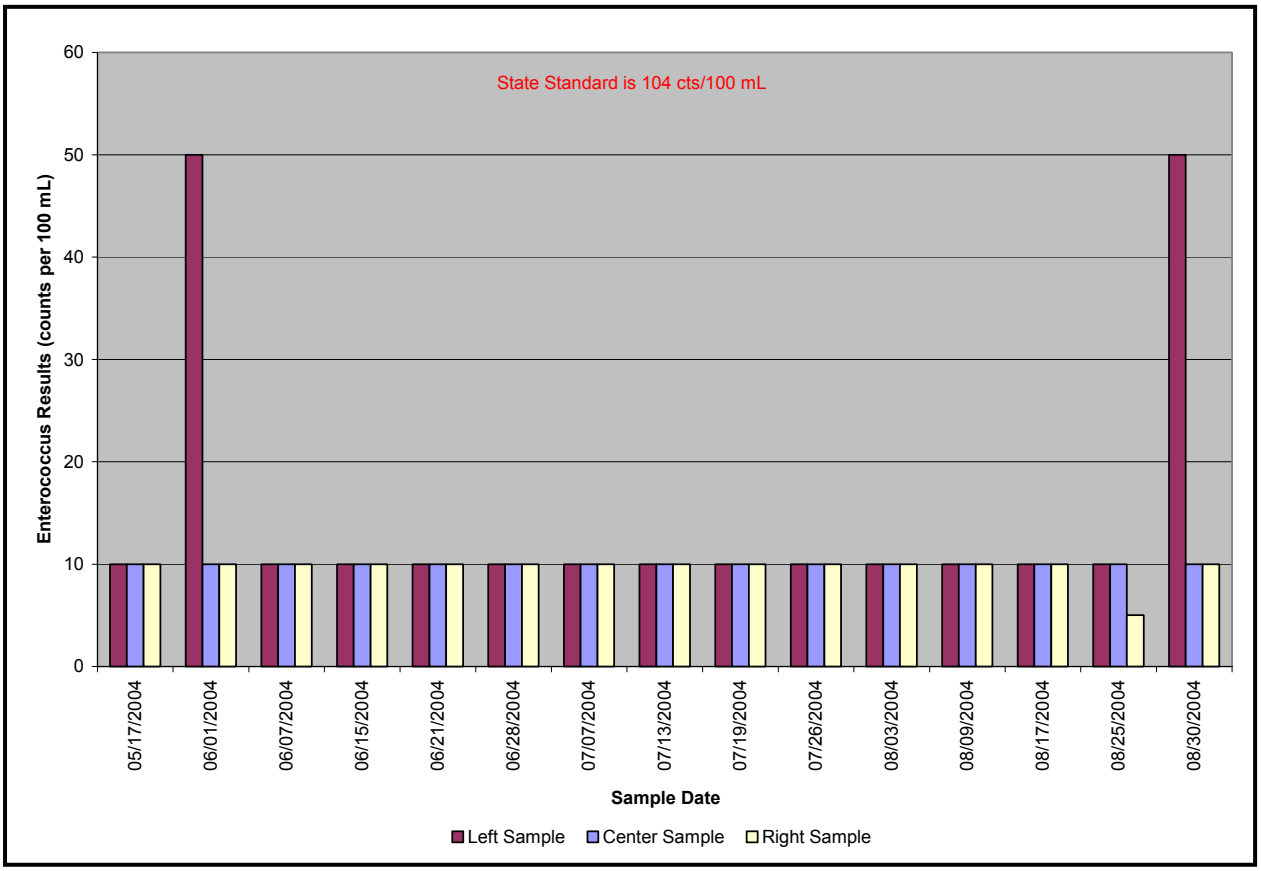

Figure 2. North Beach Enterococci Data 2004

The Beach Program staff analyzed whether a relationship exists between elevated Enterococci levels and precipitation at North Beach. Analyses of the data indicate no direct correlation. DES will continue to monitor precipitation data and Enterococci levels. Precipitation often causes elevated bacteria levels due to runoff in the watershed.

Areas of Concern

The Beach Program has not identified any areas of concern at North Beach. Although dogs were observed on the beach, no animal wastes were observed.

The renovations to the sanitary facilities were completed and are a nice improvement. The facilities are not only more aesthetically pleasing but the conditions remained clean and sanitary this season.

Thoughts for the Future

- The State Parks division, local businesses, or school groups should consider joining NHDES' Adopt-a-Beach Program. The program would consist of beach clean-ups and water quality monitoring. DES would conduct training sessions and participate in education and outreach activities for the community. If you are interested, please contact Sara Sumner at 603-271-8803 or ssumner@des.state.nh.us.